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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,432	03/02/2004	Juergen Benz	588.1016	5411

23280 7590 10/22/2007
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EXAMINER	
LE, DAVID D	
ART UNIT	PAPER NUMBER
3681	

MAIL DATE	DELIVERY MODE
10/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/791,432	BENZ ET AL.	
	Examiner	Art Unit	
	David D. Le	3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *1-22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is the sixth Office action on the merits of Application No. 10/791,432, filed on 02 March 2004. Claims 1-22 are pending.

Documents

2. The following documents have been received and filed as part of the patent application:

- Foreign Priority Document, received on 03/02/04
- Declaration and Power of Attorney, received on 04/23/04
- Information Disclosure Statement, received on 10/17/05
- New Declaration and Power of Attorney, received on 04/07/06

Response to Amendment

3. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,878,095 to Shigyo in view of U. S. Patent No. 5,547,438 to Nozaki et al.

Claims 1-22:

Shigyo (Figs. 1-5; column 2, line 21 – column 7, line 4) discloses an automatic-clutch control system of a transmission for a vehicle comprising:

- A drive motor (i.e., column 2, lines 41-42, being the internal combustion engine);
- A manual/automatic transmission (i.e., Fig. 1 and column 4, lines 30-33);
- An automatic clutch (i.e., Fig. 1, element 4) connecting the drive motor and the manual/automatic transmission (i.e., Fig. 1);
- A controller (i.e., Fig. 1, element 31) capable of automatically controlling the manual/automatic transmission;
- Wherein the controller is capable of automatically changing the engine braking mode to a free-wheeling mode (i.e., column 5, line 31 – column 6, line 17);
- Wherein the manual/automatic transmission is a motor vehicle transmission or drive train;
- Wherein the controller is controlling the automatic clutch so as to change from the engine braking mode to a free-wheeling mode (i.e., column 5, line 31 – column 6, line 17);
- Wherein reengaging the clutch when a gas pedal is operated in the free-wheeling mode when an engine rotational speed is above a transmission input rotational speed (i.e., Fig. 3; column 5, lines 22-30; when S3 is negative determination and the clutch is commanded to fully engaged at S7, which suggests that the operator intends to accelerate the vehicle; and therefore, the engine rotational speed is inherently above a transmission input rotational speed);

- Wherein the automatic clutch is disengaged to implement the free-wheeling mode (i.e., column 5, line 62 – column 6, line 6);
- Wherein the automatic clutch is disengaged to implement the free-wheeling mode when a transmission gear is equal to a maximum free-wheeling gear (i.e., column 6, lines 4-6, when the clutch 4 is completely disengaged and provide a disconnection between the currently engaged transmission gear and the engine);
- Wherein the automatic clutch is disengaged to implement the free-wheeling mode when a gas pedal has not been operated (i.e., column 5, lines 5-12);
- Wherein the automatic clutch is disengaged to implement the free-wheeling mode when an idling switch is activated (i.e., column 5, lines 5-7);
- Wherein the automatic clutch is disengaged to implement the free-wheeling mode when a driver's desired torque is less than zero (i.e., column 5, line 62 – column 6, line 6);
- Wherein the clutch is disengaged to implement the free-wheeling mode when a driving speed is less than the maximum free-wheeling speed (i.e., column 6, lines 7-17; it is inherent that the clutch 4 must be disengaged and the free-wheeling mode must also be implemented when the driving speed is lower than a minimum driveable speed of the presently engaged transmission gear, which is less than the maximum speed that the free-wheeling mode can be implemented for the presently engaged transmission gear, in order to prevent the engine from being stalled);

- Wherein the automatic clutch is disengaged to implement the free-wheeling mode when the manual/automatic transmission is shifted to an automatic driving program (i.e., column 4, line 66 – column 5, line 3);
- Wherein the automatic clutch is disengaged to implement the free-wheeling mode when a creep function is not activated (Shigyo'095 inherently discloses this limitation because it would be impossible to activate the "creep function" when the automatic clutch is completely disengaged);
- Wherein the automatic clutch is disengaged to implement the free-wheeling mode when there is no block of the free-wheeling function (i.e., column 5, line 31 – column 6, line 17; it appears that there is no block in implementing the free-wheeling mode);
- Wherein the change to the free-wheeling mode is blocked when a driving speed is greater than the maximum free-wheeling speed (i.e., column 5, line37-44, when step S8 is negative and the routine proceeds to step S7);
- Wherein the change to the free-wheeling mode is blocked when no automatic driving grogram has been activated (i.e., column 4, line 66 – column 5, line 4, when step S2 is negative and the routine proceeds to step S7);
- Wherein the change to the free-wheeling mode is blocked when a hill driving program has been activated (i.e., column 5, lines 5-12, when step S3 is negative and the routine proceeds to step S7);

- Wherein a block of the change to the free-wheeling mode is inherently deactivated when a gas pedal is operated (i.e., column 5, lines 5-12, when step S3 is negative and the routine proceeds to step S7);
- Wherein a block of the change to the free-wheeling mode is inherently deactivated when there is a change from a manual driving program to an automatic driving program (i.e., column 4, line 66 – column 5, line 4); and
- Wherein a block of the change to the free-wheeling mode is inherently deactivated when there is a change in gear with that is less than or equal to a maximum free-wheeling gear (i.e., column 4, lines 45-63).

Shigyo does not explicitly disclose:

- Reengaging the clutch when the gas pedal is operated in the free-wheeling mode only when the engine rotational speed is above the transmission input rotational speed; and
- Wherein the clutch is disengaged to implement the free-wheeling mode when no downhill driving is detected.

Nozaki (i.e., column 6, line 19 – column 11, line 45), on the other hand, teaches a control apparatus for controlling an engine of a motor vehicle comprising:

- Reengaging the clutch when the gas pedal is operated in the free-wheeling mode only when the engine rotational speed is above the transmission input rotational speed (i.e., column 10, line 66 – column 11, line 45); and

- Wherein the clutch is disengaged to implement the free-wheeling mode when no downhill driving is detected (i.e., column 6, lines 34-53).

All the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Also, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Shigyo such that the clutch can be reengaged when the gas pedal is operated in the free-wheeling mode only when the engine rotational speed is above the transmission input rotational speed and can be disengaged to implement the free-wheeling mode when no downhill driving is detected, in view of Nozaki, in order to effectively implement smooth reengagement of the clutch and eliminate any shock associated with the clutch operations (i.e., Nozaki, column 11, lines 28-45).

Response to Arguments

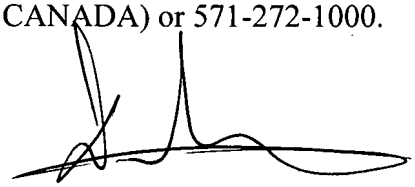
6. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Le whose telephone number is 571-272-7092. The examiner can normally be reached on Mon-Fri (0700-1530).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David D. Le
Primary Examiner
Art Unit 3681
10/17/2007

ddl